Main Venue — Wed 30th August 2023 — 09:30-10:30

Keynote Speaker Presentation

Chair:

Room: Cummins 110

Pap #	Title	Author	ID	Institution
	Smart Geo-Infrastructure - From Sensing to Machine Learning	Prof. Kenichi Soga	275	UC Berkeley, USA Member of the National Academy of Engineering (NAE), USA Fellowship of the Royal Academy of Engineering (FREng), UK and Engineering Academy of Japan
	CERN Existing and Future Tunnels	John Osborne (FICE)	255	Leader of Civil Engineering Future Studies The European Organization for Nuclear Research (CERN)

Main Venue — Wed 30th August 2023 — 14:00-14:30

Keynote Speaker Presentation

Chair:

Room: Cummins 110

Pap #	Title	Author	ID	Institution
	Practice of Machine Learning in Constitutive Modelling of Soils	Prof. Zhenyu Yin	237	The Hong Kong Polytechnic University (PolyU) Leader of GeoInvention Lab

Main Venue — Thurs 31th August 2023 — 09:00-10:00

Keynote Speaker Presentation

Chair:

Room: Cummins 110

Pap #	Title	Author	ID	Institution
	What we can learn about the ground, ground deformation and construction performance from pressure balance tunnel boring machine data	Prof. Michael Mooney	276	Colorado School of Mines Founding Director of Center of Excellence in Underground Construction & Tunneling (UC&T)
	Digital modelling and computing for underground infrastructure	Prof. Jelena Ninic	274	University of Birmingham Associate editor in Tunnelling and Underground Space Technology

Main Venue — Thurs 31th August 2023 — 14:00-14:30

Keynote Speaker Presentation

Chair:

Room: Cummins 110

Pap #	Title	Author	ID	Institution
38	Research Data Management and Processing for an Irish Geoscience Research Centre and its Stakeholders	Dr. Chris Burbidge	23	University College Dublin, SFI Research Centre for Applied Geosciences (iCRAG)

Main Venue — Fri 1st September 2023 — 10:10-11:30

Spark Award Lecture Presentation

Chair:

Room: Cummins 110

Pap #	Title	Author	ID	Institution
	Digital Underground Construction: Measurement & Monitoring	Prof. Brian Sheil	264	University of Cambridge
	AI-based back analysis of multiphysics processes in geotechnical practice	Prof. Mingliang Zhou	262	Tongji Universtiy
	Image-based machine learning in geoengineering from rock sample to large-scale infrastructure	Prof. Zili Li		University College Cork

Parallel Session 1 — Wed 30th August 2023 — 11:00-12:00

Special Session 2: Big data and machine learning in life-cycle design, construction and maintenance of tunnel and underground engineering

Chair: Prof. Dongming Zhang
Prof. Zheny u Y in
Prof. Hongwei Huang

Room: Cummins SID

Pap #	Title	Author	ID	Institution
31	Predicting Rock Type from MWD Tunnel Data using a Reproducible ML- Modelling Process	Mr Tom F. Hansen	36	Norwegian Geotechnical Institute
136	U4V Platform: a conceptual framework	Mr Giuseppe Pace	196	National Research Council of Italy

Parallel Session 2 — Wed 30th August 2023 — 11:00-12:00

Special Session 1: AI in offshore geotechnics and geoscience

Chair: Dr. Stephen Suryasentana
Dr. Brian Sheil
Dr. Róisín Buckley

Room: Cummins 110

Pap #	Title	Author	ID	Institution
95	Challenges and Opportunities of AI in Offshore Geotechnics	Prof Susan Gourvenec	117	University Of Southampton
6	Assessing the quality of synthetic CPT training data using time series similarity	Dr Jared Charles	12	University Of Southampton

Parallel Session 3 — Wed 30th August 2023 — 11:00-12:00

Special Session 5: Machine Learning & Data-driven based TBM Tunnelling

Chair: Prof. Zixin Zhang
Assoc Prof. Xin Huang
Dr. Shuaifeng Wang

Room: Cummins G09

Pap #	Title	Author	ID	Institution
56	A performance-based hybrid deep learning model for predicting TBM advance rate using Attention-ResNet-LSTM	Prof Zixin Zhang	72	Tongji University
23	Ensemble Methods for the Prediction of Tunnel Induced	Dr Tatiana Richa	22	Terrasol, Setac

Parallel Session 4 Wed 30th August 2023 11:00-12:00

Special Session 10: Back Analysis using Machine Learning for the Observational Method – Lessons Learnt and Future Directions

Chair: Prof. Franz Tschuchnigg, Assoc Prof. Graz University
Duncan Nicholson
Antonio Cañavate Grimal

Room: ELECT_L2

Pap #	Title	Author	ID	Institution
26	Considering uncertainty in both input and parameters in probabilistic model fitting using Markov Chain Monte Carlo	Dr Thomas Vergote	45	DEME Group
33	Estimation of soil moisture states in cut slope in heavy rains with digital twin	Prof Kazuhiro Oda	50	Osaka Sangyo University
37	Interface Constitutive Model Calibration of Embedded Beam with Interaction Surface using Particle Swarm Optimisation	Mr Johannes Leo	52	Institute of Soil Mechanics, Foundation Engineering and Computational Geotechnics, Graz University of Technology

Parallel Session 1 — Wed 30th August 2023 — 15:00-17:30

Special Session 3: Application of Machine Learning and Big Data in Geotechnical and Geohazard Investigations

Chair: Prof. Wengang Zhang
Dr. Jinzhang Zhang
Prof. Songlin Liu

Room: Cummins SID

Pap #	Title	Author	ID	Institution
7	Measurement-while-drilling based Estimation of Dynamic Penetrometer Values using Machine Learning	Mr Eduardo Martínez García	13	Menard España
11	Machine Learning for CPTu Interpretation	Dr Iman Entezari	24	ConeTec
12	MLpFEM - towards Machine Learning based parameter calibration	Dr Georg Erharter	16	Norwegian Geotechnical Institute (NGI)
32	Assessing Slope Deformation of the Dagangshan Hydropower Station with the Artificial Neural Network and Markov Chain Coupled Approach	Dr Bin Gong	47	Brunel University London

Parallel Session 1 — Wed 30th August 2023 — 15:00-17:30

Special Session 3: Application of Machine Learning and Big Data in Geotechnical and Geohazard Investigations

Chair: Prof. Wengang Zhang
Dr. Jinzhang Zhang
Prof. Songlin Liu

Room: Cummins SID

Pap #	Title	Author	ID	Institution
39	Testing three machine learning models for landslide detection: A Norwegian Case Study	Ms Alexandra Jarna Ganerød	51	Ngu/ntnu
42	A Machine-learning Based Approach to Regional-Scale Mapping of Sensitive Glaciomarine Clay Combining Airborne Electromagnetics and Geotechnical Data	Mr Craig William Christensen	60	Emerald Geomodelling As

Parallel Session 2 — Wed 30th August 2023 — 15:00-17:30

Special Session 1: AI in offshore geotechnics and geoscience B

Chair: Dr. Stephen Suryasentana
Dr. Brian Sheil
Dr. Róisín Buckley

Room: Cummins 110

Pap #	Title	Author	ID	Institution
28	Data-Driven Model for a Monopile Foundation at a Layered Clay Offshore Site	Mr Ioannis Kamas	46	University Of Oxford
40	Machine Learning to Predict the Stiffness of Monopile Foundations Embedded in Layered Soils	Mr Max Bowman	58	Arup Group Ltd.
114	Bayesian optimisation framework for robust and adaptive driveability predictions for offshore wind piles	Dr Róisín Buckley	186	University Of Glasgow
137	Exploring the use of machine learning for the geotechnical design of monopiles supporting offshore wind turbines	Mr David Igoe	290	Trinity College Dublin
75	Data-Driven Modelling of Failure Envelopes for Caisson Foundations	Dr Pin Zhang	94	University of Cambridge
29	AI-driven 3D point scanner for monitoring soil plug hazards	Mr Benjamin Williams	27	University Of Strathclyde

Parallel Session 2 — Wed 30th August 2023 — 15:00-17:30

Special Session 4: Machine Learning for the Mapping of Marine Geology, Geomorphology and Habitats

Chair: Dr. Riccardo Arosio
Dr. Benjamin Misiuk
Dr. Alexandre Schimel

Room: Cummins 110

Pap #	Title	Author	ID	Institution
27	Deep Learning Feature Extraction for Seabed Sediment Mapping	Mr Yan Liang Tan	26	Dalhousie University
30	Point Clouds and AI: A new approach for acoustic habitat mapping using multibeam echosounders	Dr Philipp Held	44	University Of Kiel

Parallel Session 3 — Wed 30th August 2023 — 15:00-17:30

Special Session 5: Machine Learning & Data-driven based TBM Tunnelling B

Chair: Prof. Zixin Zhang
Assoc Prof. Xin Huang
Dr. Shuaifeng Wang

Room: Cummins G09

Pap #	Title	Author	ID	Institution
105	Modelling Steering Control Decisions for Self-driving TBM	Dr Dayu Apoji	127	University of California Berkeley
145	Deformation and additional stress of existing tunnel structure induced by shield tunnelling: A LSTM-based forecasting approach	Mr Siyuan Ma	225	Zhejiang University
147	Influence of adjacent shield tunneling construction on existing tunnel settlement: field monitoring and intelligent prediction	Dr Yang Ding	227	Hangzhou City University

Parallel Session 3 — Wed 30th August 2023 — 15:00-17:30

Special Session 9: Innovative monitoring technologies and artificial intelligence for underground space

Chair: Assoc Prof. Chengyu Hong
Prof. Dong Su
Prof. Baosong Ma

Room: Cummins G09

Pap #	Title	Author	ID	Institution
21	3D Reconstruction of Subsurface Structure Defects from Crosshole GPR Images with a Generative Adversarial Network	Mr Donghao Zhang	260	Dalian University of Technology
146	Analysis of existing structure deformation induced by shield tunneling with pile cutting using IoT-based field monitoring and analytical model	Mr Zhixiong Liu	226	Zhejiang University

Parallel Session 4 — Wed 30th August 2023 — 15:00-17:30

Special Session 10: Back Analysis using Machine Learning for the Observational Method – Lessons Learnt and Future Directions B

Chair: Prof. Franz Tschuchnigg, Assoc Prof. Graz University
Duncan Nicholson
Antonio Cañavate Grimal

Room: ELECT_L2

Pap #	Title	Author	ID	Institution
45	Multivariate Probabilistic Back Analysis of Triaxial Tests of Copenhagen Clay Till	Mr Efthymios Panagiotis	33	Technical University of Denmark, DTU
51	Sensitivity and Back-Analysis Data Workflows with DAARWIN	Mrs Irene Jaques	312	Saalg Geomechanics
53	A case study of excavation back-analysis using different machine learning optimisation algorithms	Dr Ying Chen	35	TYPSA Group, UK & Ireland
57	Probabilistic back analysis of a basement excavation in Edinburgh, UK	Dr Antonio Cañavate-Grimal	75	Arup
83	Surrogate Models of Deep Excavations based on Artificial Neural Networks and Their Use in the Observational Method	Mr Jose Angel Ferrero Cafiero	99	AKT II
88	Probabilistic Back Analysis for Tunnel Excavation Simulation Based on A Rock Database	Prof Takayuki Shuku	108	Okayama University

Parallel Session 4 — Wed 30th August 2023 — 15:00-17:30

Special Session 13: Emerging technologies in geotechnics and urban systems

Chair: Dr Bingyu Zhao
Dr Chaofeng Wang
Dr Zijun Cao

Room: ELECT_L2

Pap #	Title	Author	ID	Institution
46	Towards a Geospatial Digital Twin for Slopes: a Case Study of the Po Shan Road Area, HONG KONG Island	Mr Weifan Xu	48	Hong Kong University Of Science And Technology
54	Probabilistic Inversion of Shear Wave Velocity Based on Dispersion Curve from Multichannel Surface Wave Method	Dr Xuan-Hao Wang	71	Wuhan University

Parallel Session 1 — Thurs 31st August 2023 — 10:30-12:00

Special Session 3: Application of Machine Learning and Big Data in Geotechnical and Geohazard Investigations B

Chair: Prof. Wengang Zhang
Dr. Jinzhang Zhang
Prof. Songlin Liu

Room: Cummins SID

Pap #	Title	Author	ID	Institution
50	Effect of Segmentation and Machine Learning Models on Co-seismic Landslide Detection	Ms Jhih-Rou Huang	5	University Of California, Berkeley
60	Application of Convolutional Neural Networks for 2d Soil Mapping with CPT and SPT Data	Dr Jeniffer Viegas	74	Tpf Consultores De Engenharia E Arquitetura
73	Prediction Method of Vertical Bearing Capacity of Piles Assisted With XGBoost Algorithm	Dr Zhijun Xu	87	School Of Civil Engineering, Henan University Of Technology

Parallel Session 2 — Thurs 31st August 2023 — 10:30-12:00

Special Session 4: Machine Learning for the Mapping of Marine Geology, Geomorphology and Habitats B

Chair: Dr. Riccardo Arosio
Dr. Benjamin Misiuk
Dr. Alexandre Schimel

Room: Cummins 110

Pap #	Title	Author	ID	Institution
71	Multivariate Prediction of Seabed Sediment Distributions using Convolutional Neural Networks	Dr Benjamin Misiuk	90	Dalhousie University
134	Oceanography Meets Marine Geomorphology: A Big Data Approach to Habitat Mapping	Mr Felix Butschek	194	University College Cork
36	Fully Convolutional Neural Networks for Marine Morphology Mapping using Semi-supervision	Dr Brandon Hobley	54	The University Of East Anglia

Parallel Session 2 Thurs 31st August 2023 10:30-12:00

Special Session 6: Big data and machine learning for ageing tunnels and underground infrastructures A

Chair: Prof. Asaad Faramarzi
Prof. Fei Ye
Dr. Zhipeng Xiao

Room: Cummins 110

Pap #	Title	Author	ID	Institution
89	Using a decision-making approach to evaluate the effect of accelerators on calcium leaching of sprayed concrete	Dr Chongming Tian	110	Chang'an University
101	Evaluating the Impact of Climate Change on Transport Geo-infrastructure using Novel Monitoring Tools	Mr Roberto Pantoja Porro	126	University College Cork

Parallel Session 3 — Thurs 31st August 2023 — 10:30-12:00

Special Session 9: Innovative monitoring technologies and artificial intelligence for underground space B

Chair: Assoc Prof. Chengyu Hong
Prof. Dong Su
Prof. Baosong Ma

Room: Cummins G09

Pap #	Title	Author	ID	Institution
84	A Big Data approach for building basement detection using airborne LiDAR data	Dr Anh Vu Vo	93	University College Dublin
99	Deformation monitoring of tunnel surrounding rock and axial force distribution of rock bolt based on self-sensing fiber optic anchor	Dr Xin Kang	123	Tongji University
118	Automated Pixel-level Crack Monitoring System for Large-Scale Underground Infrastructure	Mr Aohui Ouyang	178	University College Cork
127	Illustrating the Benefits of Joint Inversion of Gravity and Gravity Gradient for Near-surface Investigations in a Machine-Learning Framework	Mr Winner Oni	201	University Of Birmingham
135	Automatic Monitoring and Intelligent Prediction of Shield Segment floating during Construction	Mr Enjie Su	197	Chang'an University

Parallel Session 4 — Thurs 31st August 2023 — 10:30-12:00

Special Session 13: Emerging technologies in geotechnics and urban systems B

Chair: Dr Bingyu Zhao
Dr Chaofeng Wang
Dr Zijun Cao

Room: ELECT_L2

Pap #	Title	Author	ID	Institution
67	Modelling Post-Earthquake Urban Resilience Considering the Interactions of Multiple Critical Infrastructures	Dr Bingyu Zhao	68	TU Wien
82	Inverse analysis of braced excavation considering three-dimensional effect	Ms Sunjuexu Pan	98	Zhejiang University of Technology
106	Real-Time Ground Movement Estimation for Urban Tunnelling	Dr Dayu Apoji	127	University of California Berkeley
109	Life cycle assessment in environmental impact analysis of retaining walls	Dr Bingyu Zhao	68	TU Wien

ISMLG 2023

29th August - 1 st September 2023
Cork, Ireland

4th International Symposiumon Machine Learning &Big Data in Geoscience

UCC
Coláiste na hOllscoile Corcaigh
University College Cork, Ireland

Lunchtime Session | **Thurs 31st August 2023** | **12:00-13:00**

Room: Cummins SID

ISSMGE TC309 Committee Meeting Hybrid

Fáilte Ireland

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SFI RESEARCH CENTRE IN APPLIED GEOSCIENCES

Parallel Session 1 — Thurs 31st August 2023 — 15:00-17:30

Special Session 3: Application of Machine Learning and Big Data in Geotechnical and Geohazard Investigations C

Chair: Prof. Wengang Zhang
Dr. Jinzhang Zhang
Prof. Songlin Liu

Room: Cummins SID

Pap #	Title	Author	ID	Institution
111	Predictability of Limit Equilibrium Methods using Machine Learning Techniques	Ms Gabriela Frainz	113	Vale
112	A comparative study of backbreak distance prediction in the open-pit mine based on support vector regression and bio-inspired meta-heuristic algorithms	Mr Enming Li	180	Department of Mining Engineering and Earth Sciences, Universidad Politécnica de Madrid
115	Nationwide prediction of subsidence damage based on expert knowledge, large scale databases and models	Dr Mandy Korff	182	Deltares
129	Accurate Prediction of Dam-break Processes in Granular Flow Dynamics using Graph Neural Networks	Mr Yu Jiang	204	University College Cork

Parallel Session 1 Thurs 31st August 2023 15:00-17:30

Special Session 3: Application of Machine Learning and Big Data in Geotechnical and Geohazard Investigations C

Chair: Prof. Wengang Zhang
Dr. Jinzhang Zhang
Prof. Songlin Liu

Room: Cummins SID

Pap #	Title	Author	ID	Institution
131	Prediction of Undrained Shear Strength of Soft Clays using E	Ms Vaishnavi Bherde	206	Indian Institute of Technology, Hyderabad
133	A Comprehensive Parametric Study on the Impact of Underground Tunnelling on Neighbouring Structures Using Machine Learning	Mr Ali Gamra	207	University of Nottingham
148	Data Mining Techniques for Cause-and-Effect Analysis of Landslide Deformation	Ms Jia Wang	230	Nanjing University
124	Optimisation of in-situ soil investigation with Deep Reinforcement Learning	Dr Bruno Zuada Coelho	198	Deltares

Parallel Session 2 Thurs 31st August 2023 15:00-17:30

Special Session 6: Big data and machine learning for ageing tunnels and underground infrastructures B

Chair: Prof. Asaad Faramarzi
Prof. Fei Ye
Dr. Zhipeng Xiao

Room: Cummins 110

Pap #	Title	Author	ID	Institution
108	Study on performance of shotcrete reinforced by admixture under calcium dissolution and crystallization environment in tunnel	Dr Yueping Tong	171	Chang'an University
110	Effect of rock creep behaviour on tunnel long-term performance at CERN	Dr Zhipeng Xiao	174	University College Cork
	Prediction of maximum tunnel uplift caused by overlying excavation using XGBoost algorithm with Bayesian Optimization	Dr Haolei Zhao	281	Hefei University of Technology

Parallel Session 2 Thurs 31st August 2023 15:00-17:30

Special Session 7: Image Analysis and Machine Learning for Geomechanics

Chair: Dr. Budi Zhao
Dr. Eleni Stavropoulou

Room: Cummins 110

Pap #	Title	Author	ID	Institution
35	Using Generative Adversarial Networks to create a 2D subsoil schematization	Miss Eleni Smyrniou	53	Deltares
52	Deep Learning Applications on Stress-Birefringent Materials in Granular Flows	Dr Nicoletta Sanvitale	66	University of Cologne
94	Reverse Extrusion Test for Fine-grained Soil Characterisation: Internal Flow Pattern with ANN-Enhanced Particle Tracking	Dr Budi Zhao	116	University College Dublin
128	Breakage Analysis of Angular Sands using Morse Theory-based Segmentation	Ms Manasa Bhat K I	203	Indian Institute Of Science, Bangalore

Parallel Session 3 — Thurs 31st August 2023 — 15:00-17:30

Special Session 9: Innovative monitoring technologies and artificial intelligence for underground space C

Chair: Assoc Prof. Chengyu Hong
Prof. Dong Su
Prof. Baosong Ma

Room: Cummins G09

Pap #	Title	Author	ID	Institution
69	Identification of construction defects in concrete piles using numerical modelling and neural networks	Dr Agustin Ruiz Lopez	89	Imperial College London

Parallel Session 3 — Thurs 31st August 2023 — 15:00-17:30

Special Session 12: Data-driven solutions for underground built heritage modeling, preservation and valorization

Chair: Alfonso Bahillo Martinez
Pinar Karagoz
Giuseppe Pace

Room: Cummins G09

Pap #	Title	Author	ID	Institution
130	Devising a Uniform Description of Underground Built Heritage Sites	Prof Pinar Karagoz	205	Middle East Technica University (metu)
25	An Investigation into the Robustness of Machine Learning Models for Bridge Scour Risk Assessment	Dr Tianyu Wang	30	SNCF Réseau/Université Gustave Eiffel

Parallel Session 3 Thurs 31st August 2023 15:00-17:30

Special Session 8: Deep Learning & Computer Vision Aided Characterization of Geotechnical Processes A

Chair: Prof. Ningjun Jiang
Xiaole Han
Yijie Wang

Room: Cummins G09

Pap #	Title	Author	ID	Institution
153	EnergyPileresistancecalculationmethodsusinggeneticalgorithm	Dr Andrzej Głuchowski	259	Warsaw University of Life Sciences
155	MachineLearning-BasedDesignofActiveDeformationNodes for Tunnel Support	Mr Zhiming Xu	249	Southwest Forestry University

Parallel Session 4 — Thurs 31st August 2023 — 15:00-17:30

Special Session 13: Emerging technologies in geotechnics and urban systems C

Chair: Dr Bingyu Zhao
Dr Chaofeng Wang
Dr Zijun Cao

Room: ELECT_L2

Pap #	Title	Author	ID	Institution
140	Automated Road Defect Detection using Smartphone Sensors	Dr Kai Zhao	202	University College Cork
151	Research on roof cutting pressure relief of gob-side entry retaining with roadside backfilling	Kun Zhang	168	China University of Mining and Technology

Parallel Session 4 — Thurs 31st August 2023 — 15:00-17:30

Special Session 14: Data Quality Assurance and Pre-processing in Geoscience

Chair: Dr.Alla Sapronova
Dr.Thomas Dickmann
Dr.Marlene Villeneuve

Room: ELECT_L2

Pap #	Title	Author	ID	Institution
15	Generating Synthetic TBM Operational Data using Generative Adversarial Networks (GANs)	Mr Paul Unterlass	32	Graz University Of Technology
19	Detection of Incorrect labels in Data for Interpretation of the Geological Conditions Ahead of the Tunnel Face	Mr Paul Unterlass	32	Graz University Of Technology
20	Manual Pre-processing of Monitoring While Drilling Data: State of Practice	Prof Marlene Villeneuve	41	Montanuniversität Leoben
22	Use and limitations of various metrics to assess the quality of extreme sparse datasets in geotechnics	Mr Matthias Hahn	31	Chair of Subsurface Engineering, Montanuniversität Leoben/Austria
34	Anomaly Detection of Rare Events in Geothermal Systems Wireline Logs for Higher Accuracy Facies Boundaries Assignment	Miss Aliaa Hammoud	49	Montan University Leoben
43	Correlational Analysis for Extracting Patterns in Geotechnical Data	Dr Alla Sapronova	61	Graz University of Technology

Parallel Session 1 — Fri 1st September 2023 — 09:00-09:30

Special Session 3: Application of Machine Learning and Big Data in Geotechnical and Geohazard Investigations A

Chair: Prof. Wengang Zhang
Dr. Jinzhang Zhang
Prof. Songlin Liu

Room: Cummins SID

Pap #	Title	Author	ID	Institution
150	Machine Learning-based Natural Terrain Landslide Susceptibility Analysis in Hong Kong	Ms Wai Ming Helen Li	78	Geotechnical Engineering Office, CEDD, HKSARG

Parallel Session 2 — Fri 1st September 2023 — 09:00-09:30

Special Session 7: Image Analysis and Machine Learning for Geomechanics B

Chair: Dr. Budi Zhao
Dr. Eleni Stavropoulou

Room: Cummins 110

Pap #	Title	Author	ID	Institution
8	Association Rule Analyses and Landslide Deformation Prediction using Data Mining	Prof. Honghu Zhu	18	Nanjing University
86	Wear Prediction of Shield Disc Cutter during Tunnelling in Composite Strata Based on Machine Learning Method	Dr Jiaqi Chang	105	Tongji University

Parallel Session 3 Fri 1st September 2023 09:00-09:30

Special Session 8: Deep Learning & Computer Vision Aided Characterization of Geotechnical Processes B

Chair: Prof. Ningjun Jiang
Xiaole Han
Yijie Wang

Room: Cummins G09

Pap #	Title	Author	ID	Institution
18	Prediction model of residual settlement for railway due to train load in silty clay using machine learning	Dr Dong-Wook Oh	39	Dongyang University
154	~~Study of Heat Transfer through the Ground and its~~ Accumulation Properties to Increase the Energy Efficiency of Underground Buildings	Dr Sandeep Bandarwadkar	269	Kaunas University of Technology

Parallel Session 4 — Fri 1st September 2023 — 09:00-09:30

Special Session 14: Data Quality Assurance and Pre-processing in Geoscience B

Chair: Dr.Alla Sapronova
Dr.Thomas Dickmann
Dr.Marlene Villeneuve

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Pap #	Title	Author	ID	Institution
152	Geological Survey Ireland in the Big Data and Machine Learning Domains	Mr Russell Rogers	222	Geological Survey Ireland

Lunchtime Poster Session Thurs 31st August 2023 (TBC)

Room: Devere Hall

Pap #	Title	Author	ID	Institution
5	Benthic habitat mapping using marine geophysics and machine learning on the continental shelf of South Africa	Dr Talicia Pillay	11	Council For Geoscience
18	Predictive Model of Settlement for Disconnected Piled Raft According to Thickness of Load Transfer Platform Using Machine Learning	Dr Dongwook Oh	39	Dongyang University
49	Sensitivity Analysis of Optimal Sensor Locations for the Global Ocean with Forward-Mode Automatic Differentiation	Mr Alexander Lobashev	25	Skolkovo Institute of Science and Technology
59	SYNTHETICALLY GENERATED SPALLING CAN IMPROVE THE PERFORMANCE OF AUTOMATED TUNNEL LINING MASONRY JOINT DETECTION	Mr Jack Smith	76	University of Leeds
65	Mechanical behaviour of PowerSeal Saddle for service line	Ms Qinglai Zhang	85	University College Cork

Lunchtime Poster Session Thurs 31st August 2023 (TBC)

Room: Devere Hall

Pap #	Title	Author	ID	Institution
68	UAV data acquisition method for transportation tunnel inspection	Ms Ran Zhang	88	University College Cork
74	Long-term deteriorating performance of a cross-passage twin tunnel: a case study of Dublin Port Tunnel	Mr Chao Wang	241	University College Cork
90	Efficiently Mapping Canada's Waterways: Maximum Likelihood Seabed Classification for the Salish Sea	Ms Karen Douglas	107	Geological Survey Of Canada
97	A Critical Appraisal on the Applicability of Correlation Analysis Methods in Intelligent Prediction Models for TBM Tunnelling	Mr Jingke Yan	120	Tongji University
103	Deformation Monitoring of Tunnel using Phase-based Motion Magnification and Optical Flow	Mr Kecheng Chen	19	UC Berkeley

Lunchtime Poster Session Thurs 31st August 2023 (TBC)

Room: Devere Hall

Pap #	Title	Author	ID	Institution
121	Review: Analysis of Hydraulic Fracturing Using Image and Acoustic Emission Data	Mr Jian Liu	104	University College Cork
125	The challenges and advantages of using drilling parameters recording in real life situations	Dr. Mehdi MAHMOUDYSEPEHR	199	VSL UK